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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/621,394	07/18/2003	Katsuaki Minami	GOT 172	2444

23995 7590 10/14/2005

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EXAMINER	
WEISKOPF, MARIE	

ART UNIT	PAPER NUMBER
3661	

DATE MAILED: 10/14/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/621,394	MINAMI ET AL.	
	Examiner	Art Unit	
	Marie A. Weiskopf	3661	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *07/18/2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☐ Claim(s) _____ is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-8 and 11* is/are rejected.

7)☒ Claim(s) *9-10* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *07/18/2003* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *07/18/03 & 3/19/04*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. Claims 1-11 have been examined.

Drawings

2. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(4) because reference character "S31" in Figure 10 has been used to designate both step Ne=0 and step 'detection process constant speed control'. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

3. The disclosure is objected to because of the following informalities:

- Page 26, Paragraph 0107 – S45 should be changed to S25.
- Page 28, Paragraph 0118 – The examiner believes S2 and S3 should be changes to S32 and S33.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless – (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-6, 11 are rejected under 35 U.S.C. 102(b) as being anticipated by Ehlbeck et al. (US 6,092,021.) Ehlbeck et al. discloses a fuel use efficiency system for a vehicle for assisting the driver to improve fuel economy comprising:

- In regards to claim 1, an evaluation system for vehicle operating conditions, comprising:
    - An automatic control device which sets target vehicle operating conditions and controls the vehicle so as to achieve the target operating conditions (Column 3, lines 34-45; Column 13, lines 25-33)
    - A controller that functions to:
        - Determines whether an operation that worsens fuel economy has been performed. (Column 3, lines 1-5; Abstract)
        - Determine the operating state of the automatic control device based on the operating conditions of the vehicle. The engine includes a variety of sensors and controls used to monitor and control the engine. (Column 3, lines 34-35)
        - Computes excess fuel consumption. (Column 6, lines 56-59)

- A display device which displays the computer excess fuel consumption. (Column 1, lines 1-5)

- In regards to claim 2, the control further functioning to:
  - Computes the amount of excess fuel that is consumed and the cause of the consumption of the excess fuel. Also, the assumed fuel consumption of actions is recorded based on actions. (Column 6, lines 56-59; Column 8, lines 10-24)
- In regards to claim 3, the automatic device is a constant speed control device and the controller further functions to:
  - Determine that the constant speed control device is operating when vehicle operating conditions have achieved predetermined operating conditions. (Column 15, lines 35-62)
- In regards to claim 4, the constant speed control device has an output control device for an engine and the controller further functions to:
  - Determine an operating state of the output control device
  - The torque of the engine is calculated based on the operating state of the output device and the characteristics of the engine. (Column 3, lines 42-45.) The excess fuel module determines the incremental portion of the fuel being consumed to operate the vehicle. (Column 8, lines 11-25)
- In regards to claim 5, the controller further functions to:
  - The output of engine is computed from the torque and rotational speed of the engine (Column 15, line 35-Column 16, line 24)

- The fuel consumption is computed by multiplying the fuel consumption ratio by the output of the engine. (Column 15, lines 57-62)

- In regards to claim 6, the output control device is a device for controlling the fuel injection amount with an injection pulse, and the controller further functions to compute the fuel consumption ratio and the torque of the engine based on the rotational speed of the engine, the injection pulse wide, and the characteristics of the engine. (Column 3, lines 46-65)
- In regards to claim 11, an evaluation method for operating conditions of a vehicle having an automatic control device which sets target vehicle operating conditions and controls the vehicle so as to achieve the target operating conditions (Abstract; Column 4, lines 9-13), comprising:
  - Determining whether an operation that worsens fuel economy has been performed based on the operating conditions of the vehicle (Column 3, lines 1-5; Abstract)
  - Determining the operating state of the automatic control device based on the operating conditions of the vehicle (Column 3, lines 34-35)
  - Computing an excess fuel consumption which is a fuel amount consumed in excess by the operation that worsens fuel economy based on the operating conditions of the vehicle and the operating state of the automatic control device (Column 6, lines 56-59; Column 8, lines 10-24)

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ehlbeck et al. (US 6,092,021) in view of Morimoto (US 4,909,103.) Ehlbeck et al. fails to disclose where the automatic control device is an automatic transmission comprising a torque converter and the controller functioning to detect the operating state of the automatic transmission based on an input/output rotational speed ratio, which is the ratio between a rotational speed of the engine and an output rotational speed of the torque converter. Morimoto discloses a relationship between the engine torque characteristics and the rotational speed ratio which is a input member of the torque converter and the output member which is obtained from the ratio of engine speed. (Column 1, lines 33-45) It would have been obvious to one having ordinary skill in the art at the time of the invention to include an automatic transmission which comprises a torque converter and having the controller function to detect the operating state of the automatic transmission in order to provide an evaluation system which is able to work on automatic transmissions and can detect the fuel consumption.

7. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Morimoto (US 4,909,103) as applied to claim 7 above, and further in view of Hirota et al. (US 5,637,052.) Ehlbeck et al. and Morimoto both fail to disclose:

- Calculating the torque ratio and power transmission efficiency of the torque converter from the input/output rotational speed and characteristics of the torque converter
- Computing the fuel amount consumed in excess by the slippage of the torque converter based on the torque ratio and the power transmission efficiency of the torque converter

Hirota et al. discloses the determination of the transmission efficiency that is determined from the transmission torque and the rotational speed of the torque converter. (Column 2, lines 10-25) Hirota et al. also discloses calculating the slip ratio for the torque converter in order to learn the optimal gear ratio. (Column 4, lines 4-21) It would have been obvious to one having ordinary skill in the art at the time of the invention to include the transmission efficiency and also to calculate the slippage of the torque converter and compute the fuel consumption in order to provide a system which will be able to tell the user at all times when there is an excess fuel consumption.

Allowable Subject Matter

8. Claims 9 and 10 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- US Pat. No. 4,494,404 to Strifler discloses a fuel-consumption monitoring system for motor vehicles with manually-shifted transmissions.
- US Pat. No. 4,905,544 to Ganoung discloses a powertrain control apparatus for improving fuel economy.
- US Pat. No. 4,354,173 to Kuhn et al. discloses an arrangement for obtaining an indication of efficiency of operation of a motor vehicle.
- US Pat. No. 4,398,174 to Smith, Jr. discloses a fuel consumption signaling system.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Marie A. Weiskopf whose telephone number is (571) 272-6288. The examiner can normally be reached on Monday-Friday between 7:00 AM and 3:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas Black can be reached on (571) 272-6956. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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